

ceremony which is today known as kosher. Animals which have died may never form part of a food supply, and even freshly killed meat must not be kept beyond the third day at the latest. The reason is obviously the danger of meat spoiling in the hot climate and thus causing disease. A similar reasoning attaches to the well-known proscription of pork, which arises from the danger of pigs, like rats which are also forbidden, being infected with trichinella.

Many other public health measures could be quoted, but let me close with one example of how something of all this has penetrated into the modern world. The word quarantine is familiar to all,

but how many know where it came from? Italy in the 14th century was ravaged by epidemics, in which it was noticed that the Jews suffered less than the Gentiles. On investigation it was discovered that the Jewish community was observing the Levitical law which demanded that everyone who had been in contact with any source of impurity or infection should observe a 40-day period of ritual cleansing and isolation. This seemed so much sense to the Italian authorities that they made the regulation mandatory on Gentiles as well as Jews. The Italian word for forty is *quaranta*, and hence the period of isolation came to be known as quarantine.

## GENERAL PRACTICE

### Cervical Traction in the Home

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#### ABSTRACT

The indications for and contraindications to cervical traction are discussed. The social and economic advantages to be obtained from carrying out such treatment at home are obvious. A special technique is described which does not make use of weights and in which traction is applied in a position of flexion rather than of extension.

#### SOMMAIRE

Les indications et contre-indications de la traction cervicale sont discutées. Les avantages économiques et sociaux d'un tel traitement, à domicile, sont discutés. La technique décrite supprime l'emploi de poids et permet d'appliquer une traction cervicale en position de flexion plutôt qu'en position d'extension.

**C**ERVICAL traction is a useful, simple therapeutic procedure;<sup>1</sup> so simple, in fact, that it is frequently misapplied and occasionally unsuccessful.<sup>2-5</sup> The purpose of this article is to draw attention to the common misuse of this technique and to review briefly the basic principles involved in its proper application.<sup>6</sup>

Although cervical traction is usually considered to be a conservative form of treatment,<sup>7</sup> daily outpatient visits to a distant physiotherapy department are frequently impractical and inconvenient. The economic and practical disadvantages of prolonged treatment by this means would be overcome to a considerable extent if it could be performed at home. The use of cervical traction in the home will be discussed, with particular emphasis on the

instructions given to the individual who will apply and modify the treatment, i.e. the patient himself.

#### INDICATIONS FOR AND CONTRAINDICATIONS TO CERVICAL TRACTION

Cervical traction is beneficial in the treatment of the following conditions: (1) cervical disc disease, with or without root irritation (unless there is a gross neurological deficit, the initial treatment should be conservative and include the judicious use of cervical traction); (2) facet osteoarthritis; and (3) acceleration extension injuries without unstable post-traumatic lesions.

Although cervical traction is rarely dangerous, there are nonetheless some contraindications: (1) inadequate investigation (cervical traction should never be prescribed without a thorough orthopedic and neurological examination as well as a complete

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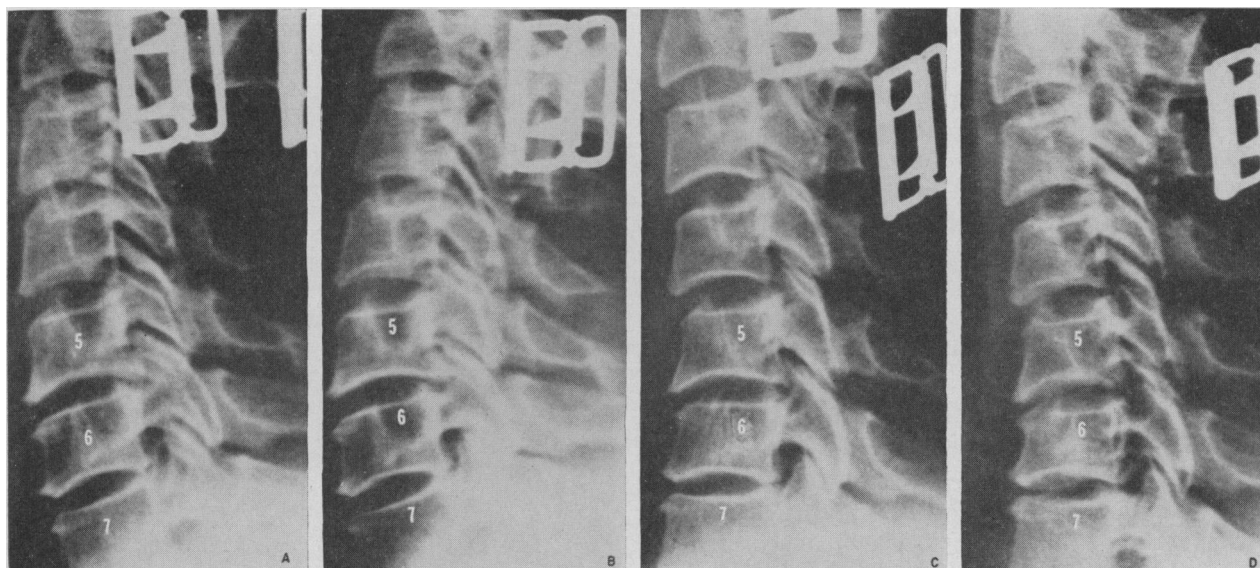


Fig. 1.—Cervical radiographs during application of traction. A. Sling in place without traction: Note the loss of cervical lordosis. B. Traction in a position of slight extension: The increased disc height is not striking but it is more noticeable at the level of the upper disc spaces. The posterior displacement of C5 on C6 appears to have been aggravated, and facet subluxation at that level has increased. No pain relief. C. Same traction as in Fig. 1 B, but in a position of flexion; the patient is turned 180° so that he is facing the door instead of turning his back to it. Pain relief was gradual and definite. The posterior displacement of C4 on C5 as well as that of C5 on C6 has been corrected, with increased disc height posteriorly; facet subluxation has also been decreased. D. Same traction as in Fig. 1 B and C with more flexion as the patient moves farther away from the door. Pain relief was complete. The C6-C7 disc space has widened and the lower intervertebral foramina are clearly visible.

radiological examination); (2) neoplastic disease; (3) unstable post-traumatic lesions of the cervical spine; and (4) cervicobrachial pain associated with an important neurological deficit.

#### BASIC PRINCIPLES IN PROPER APPLICATION OF CERVICAL TRACTION

The efficacy of this form of treatment depends on the direction and strength of the traction force, and the duration and frequency with which it is applied.

##### Direction of Traction

Patients suffering from neck pain usually exhibit cervical spasm, with a diminution of the cervical lordosis which is readily confirmed radiologically. The pain is almost invariably aggravated by forceful extension of the cervical spine, whereas flexion is less painful although it may also be limited. Hence, because of antalgic muscle spasm the patient unconsciously flexes his cervical spine in an attempt to relieve his pain. By so doing he attempts to decrease cervical root irritation by distraction of the posterior disc space and partial correction of posterior joint subluxation (Fig. 1). The object of cervical traction is to assist the patient in these pain-relieving maneuvers. If it is strong and is applied in a vertical direction, traction will likely be successful. However, if it is applied in a position of cervical extension it will restore the pain-producing situation and will cancel any benefit that traction could have achieved. If, on the other hand, the same traction is applied in a

position of cervical flexion, the chances that it will relieve pain and spasm will be considerably increased.

It is essential to bear in mind that cervical traction is used to treat a symptom and not a disease—to relieve the patient of his pain with no attempt to cure his disc disease or his facet osteoarthritis. This is essentially an empirical form of treatment and the actual mechanism by which it relieves pain is not precisely known.

The patient should also be instructed to modify the direction of traction in the sagittal plane as well as in the transverse plane so that he may himself determine the optimal position during application of traction.

##### Strength of Traction

Cervical intervertebral discs are small and unstable in comparison with the discs in the lumbar area. Therefore cervical traction, when properly applied, need not be very forceful, but one should not hesitate to apply a stronger force if pain relief is not achieved within a reasonable time, i.e. during the course of treatment. Because of the difficulty in devising appropriate appliances to modify the strength of traction, as employed in the home, we have now discontinued the use of weights for this purpose (*vide infra*).

##### Duration of Traction

The relief of pain, particularly of discomfort in the interscapular area, should be almost complete while the traction force is being applied. If there

is no relief within a period of five minutes, the patient should modify either the direction or the strength of the traction force. On the other hand, the reappearance of the pain will determine the optimum duration of the period for which traction should be applied. The patient himself will discover how long the traction should be applied to provide the longest-lasting comfort. The first treatment should last approximately five minutes; as the patient becomes accustomed to such treatment, he will gradually prolong it until he finds the optimal duration.

### *Frequency of Application*

The frequency with which this form of treatment is applied will depend on the extent of its effectiveness. Traction should be reinstituted when symptoms reappear. As time goes on, the periods of remission should become more prolonged and treatments can eventually be discontinued entirely.

### TECHNIQUE

The recommended apparatus (Fig. 2) is familiar to all. Unfortunately the commercial drawing which is usually supplied with this apparatus to illustrate the method of application shows the traction being applied in a position of cervical extension, in our experience the least effective position.

The patient is instructed to sit (Fig. 3A) facing a door, from the frame of which he will be suspended by means of a pulley (Fig. 2B). He should be seated on two large books, usually telephone books, approximately two to three inches in thickness, which are placed on the seat of a chair (Fig. 3A). He then pulls firmly downward on the rope, as shown in Fig. 3B, thereby applying, *via* the pulley, an upward traction force on the neck. The patient should stretch his trunk to his maximum height (Fig. 3C) to reinforce the traction force. The rope is then fixed by winding it 10 or 15 times around the shaft of the door knob (Fig. 2A). Because the apparatus is thus firmly fixed, very little force will be necessary to maintain the stronger traction force which is applied later. The patient then rises and removes one book from under his seat (Fig. 3D). If after a few minutes there is no pain relief, even after modifying the direction of traction, he removes the second book, thereby increasing the traction on his neck by a fraction of his body weight. By moving away from the door, cervical flexion will be increased and relief is usually achieved within a short period of time. The patient may find that further relief may also be obtained by moving to one side (Fig. 3F). In general, the optimal position is usually one which permits the patient to read a book while traction is applied (Fig. 3E). This is a position of gentle cervical flexion with the eyes directed almost to knee level; this position is quite comfortable, in marked contrast to the position of the patient

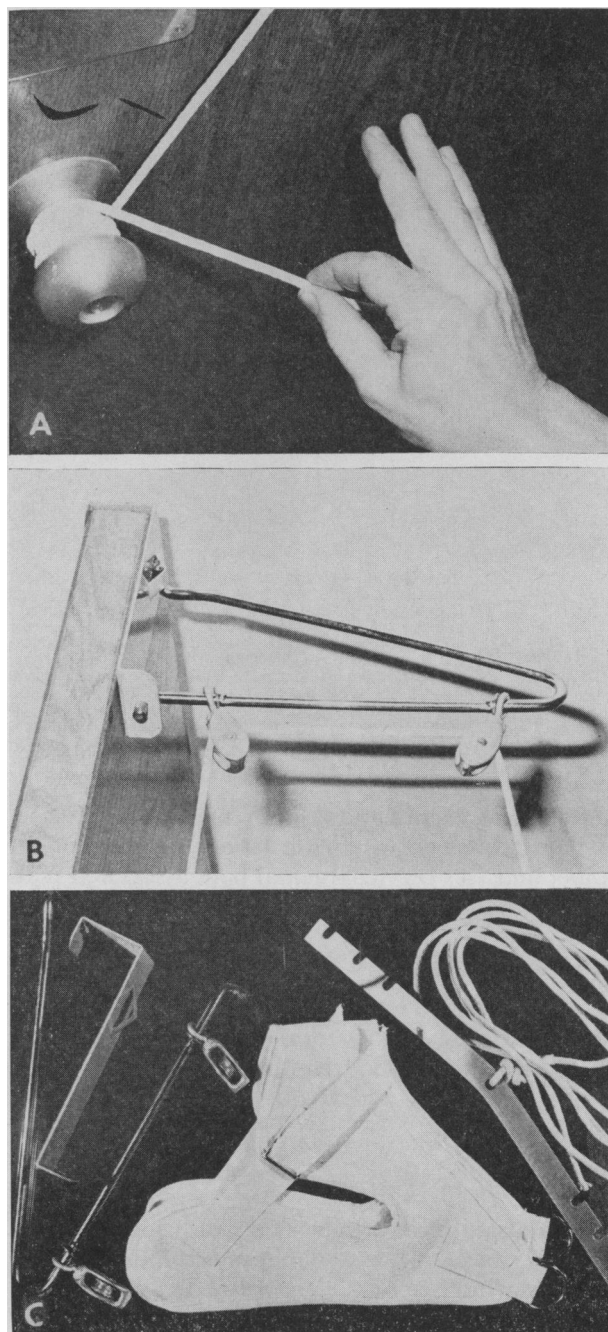


Fig. 2.—Traction apparatus.

when traction is applied in extension, in which the direction of vision is toward the ceiling.

### SUMMARY

A technique of cervical traction is described. This procedure is designed to be performed at home by the patient, preferably in a position of flexion. When prescribing cervical traction, considerable time should be spent in explaining to the patient the purpose and technique of this procedure. Specific instructions should be provided with respect to the direction of traction, the strength of traction, the duration of traction, and the frequency of treatments. The extent of pain relief during treatment will assist the patient in determining the optimal direction and strength of traction; the

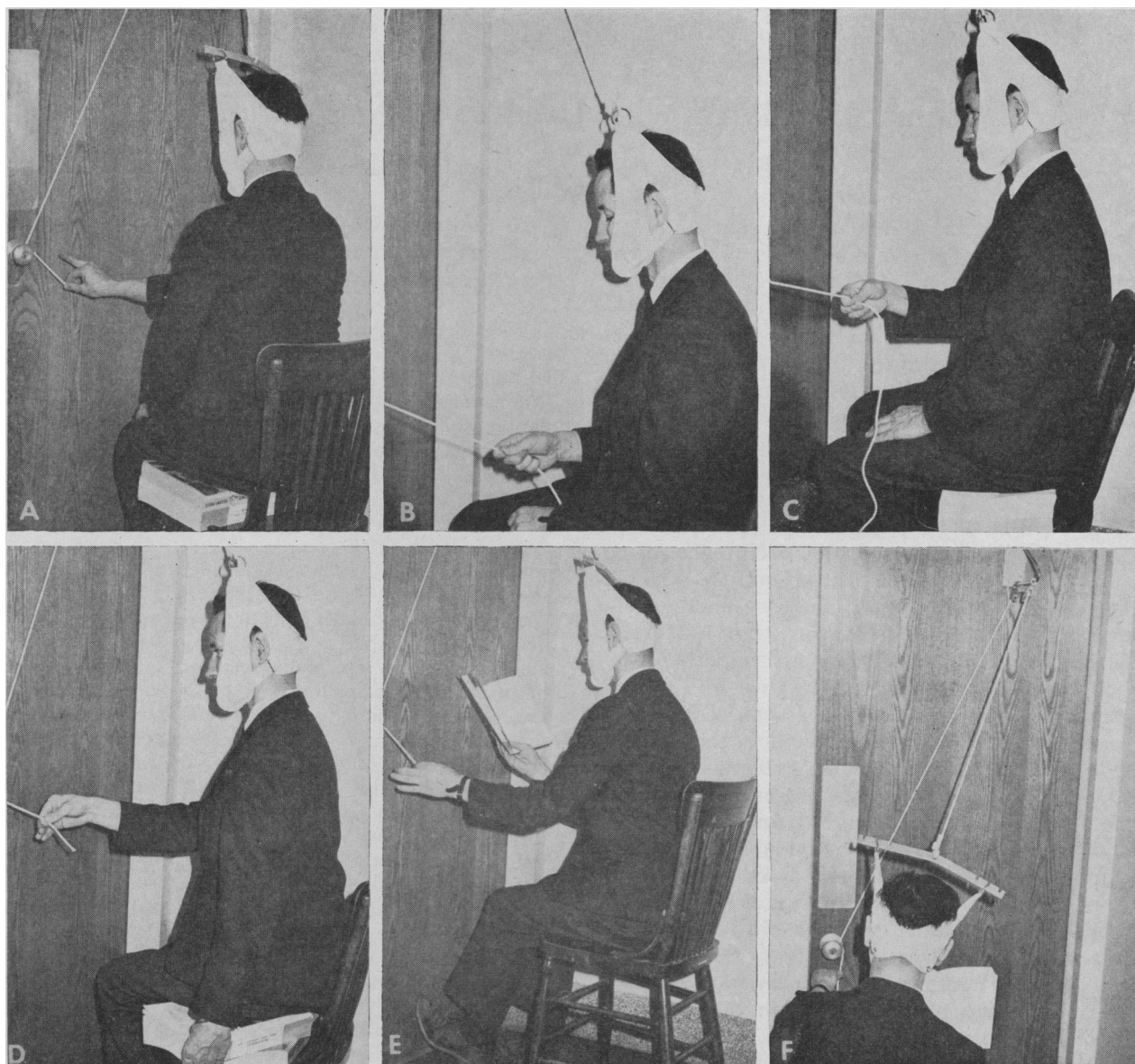


Fig. 3.—Technique of traction.

reappearance of pain following cessation of traction will determine the frequency and duration of treatments.

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#### PAGES OUT OF THE PAST: FROM THE JOURNAL OF FIFTY YEARS AGO

##### THE REAL KIND OF FAITH

One might be inclined to think of Dr. Trudeau's devotion to this laboratory as indicating a tendency towards materialism, but one must at once dispel such thoughts: "I sometimes almost rebel at the sneers of the scientists at our emotions. They are just as much a part of us as our intellects and though they may be misled, they are capable of leading us much higher and farther than our reason. Our friendships are the best things in our lives and they

are surely not influenced by our reason. The great gospels themselves do not appeal to our intellects, and yet they are the sources of all that is best in us." To another he wrote: "The more I live, the more I feel that what we need is faith, faith in the simple teaching of Christ as a moving force in our lives, not as merely something to theorize about. I do not believe that anyone ever gets faith—the real kind of faith—by learned books or discussions, but simply through living it."—Editorial, *Canad. Med. Ass. J.*, 6: 46, 1916.